The grade adjustment factor accounts for affects of terrain on both average speeds and percent time-spent-following regardless of the existence of heavy vehicles. *Note – the same HCM Equation (20-3) is used to determine flow rates for both the average travel speed and percent time spent following methodologies. However the values of the adjustment factors input in the equation are different for each methodology.* Table A26 gives grade adjustments for speeds while Table A27 gives grade adjustments for percent time-spent-following.

		Type of Terrain	
Range of Two-Way Flow Rates (pc/h)	Range of Directional Flow Rates (pc/h)	Level	Rolling
0-600	0-300	1.00	0.71
> 600-1200	>300-600	1.00	0.93
> 1200	> 600	1.00	0.99

Table A26. Grade Adjustment Factor (f_G) to Determine Speeds on Two-Way and Directional Segments (HCM Exhibit 20-7)

		Type of Terrain	
Range of Two-Way Flow Rates (pc/h)	Range of Directional Flow Rates (pc/h)	Level	Rolling
0-600	0-300	1.00	0.77
> 600-1200	>300-600	1.00	0.94
> 1200	> 600	1.00	1.00

Table A27. Grade Adjustment Factor (f_G) to Determine Percent Time-Spent-Following on Two-Way and Directional Segments (HCM Exhibit 20-8)

The heavy vehicle adjustment factor is calculated using HCM Equation 20-4. The passenger-car equivalents for this equation are found in Tables A28 and A29 for speeds and percent time-spent-following, respectively.

$$f_{HV} = \frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)} \qquad (20\text{-}4)$$

where

f_{HV} = heavy-vehicle adjustment factor,
P_T = proportion of trucks in the traffic stream, expressed as a decimal,
P_R = proportion of RVs in the traffic stream, expressed as a decimal,
E_T = passenger-car equivalent for trucks, obtained from Tables A26 and A27, and
E_R = passenger-car equivalent for RVs, obtained from Tables A28 and A29.